

CLAIMS

1. A display device including:
a display that produces a visible representation of an image; and
5 an illuminant condition sensor that senses illuminant conditions surrounding the display device.
2. The display device of claim 1, further comprising computer circuitry that calibrates the display according to the illuminant conditions sensed by the sensor.
- 10 3. The display device of claim 1, wherein the illuminant condition sensor senses display emission characteristics of the display in addition to illuminant conditions surrounding the display device.
- 15 4. The display device of claim 3, further comprising computer circuitry coupled to the sensor, the computer circuitry automatically calibrating the display according to illuminant conditions sensed by the sensor and display emission characteristics sensed by the sensor.
- 20 5. The display device of claim 1, further comprising a second sensor that senses display emission characteristics.
6. The display device of claim 1, wherein the illuminant condition sensor senses
25 display emission characteristics of the display in addition to illuminant conditions surrounding the display device, and wherein the sensor can be positioned at a first location to detect illuminant conditions and positioned at a second location to detect emission characteristics.
- 30 7. The display device of claim 1, wherein the sensor comprises a charge coupled device.

8. The display device of claim 7, wherein the charged coupled device is a linear charged coupled device.

5 9. The display device of claim 1, wherein the sensor forms part of the display device.

10. The display device of claim 1, wherein the sensor comprises a charge injection device.

10 11. The display device of claim 1, wherein the sensor comprises a photomultiplier tube.

12. The display device of claim 1, wherein the sensor comprises a photodiode.

15 13. The display device of claim 1, wherein the sensor comprises a spectroradiometer.

14. The display device of claim 1, wherein the sensor comprises a complimentary metal oxide semiconductor.

20 15. A method comprising:
sensing illuminant conditions with an illuminant condition sensor that forms part of a display device; and
automatically adjusting display characteristics of the display device according
25 to the sensed illuminant conditions.

16. The method of claim 15, wherein the illuminant condition sensor provides input to a display driver, and wherein the display characteristics of the display device are automatically adjusted by the display driver.

30

17. The method of claim 15, wherein the illuminant condition sensor provides input to calibration circuitry, and wherein the display characteristics of the display device are automatically adjusted by the calibration circuitry.

5 18. The method of claim 15 wherein sensing illuminant conditions with an illuminant condition sensor comprises sensing illuminant conditions with a charged coupled device.

10 19. The method of claim 15, further comprising sensing display emission characteristics and automatically adjusting display characteristics of the display device according the display emission characteristics.

15 20. The method of claim 19, wherein sensing display emission characteristics comprises sensing display emission characteristics with the illuminant condition sensor.

20 21. A method comprising:
sensing illuminant conditions with an illuminant condition sensor that forms part of a display device; and
adjusting color data according to the sensed illuminant conditions.

25 22. The method of claim 21, wherein sensing illuminant conditions with an illuminant condition sensor comprises sensing illuminant conditions with a charged coupled device.

23. The method of claim 21, further comprising sensing display emission characteristics and adjusting color data according the sensed display emission characteristics.

24. The method of claim 21, further comprising sensing display reflection characteristics and adjusting color data according the sensed display reflection characteristics.

5 25. The method of claim 23, wherein sensing display emission characteristics comprises sensing display emission characteristics with the illuminant condition sensor.

10 26. The method of claim 21, wherein adjusting color data occurs in a color matching module.

27. The method of claim 21, wherein adjusting color data comprises adjusting color data according to an illuminant condition algorithm.

15 28. The method of claim 21, wherein adjusting color data comprises adjusting color data according to an illuminant condition look-up table.

20 29. The method of claim 27, wherein adjusting color data further comprises adjusting color data according to an emission characteristics algorithm.

30. The method of claim 28, wherein adjusting color data further comprises adjusting color data according to an emission characteristics look-up table.

31. A system comprising:

25 a display device including an illuminant condition sensor that senses illuminant conditions surrounding the display device, and

a color matching module coupled to the sensor that adjusts color data according to the sensed illuminant conditions.

30 32. The system of claim 31, wherein the illuminant condition sensor includes a charged coupled device.

33. The system of claim 31, wherein the illuminant condition sensor further senses emission characteristics of the display device, and

wherein the color matching module further adjusts color data according to the sensed emission characteristics.

34. The system of claim 31, wherein the color matching module adjusts color data according to an illuminant condition algorithm.

35. The system of claim 31, wherein the color matching module adjusts color data according to an illuminant condition look-up table.

36. The system of claim 33, wherein the color matching module adjusts color data according to an emission characteristics algorithm.

37. The system of claim 33, wherein the color matching module adjusts color data according to an emission characteristics look-up table.

38. The system of claim 31, further comprising a color management control, the color matching module residing in the color management control.

39. The system of claim 38, further comprising a printing device coupled to the color management control.

40. The system of claim 39, further comprising a plurality of display devices, each including an illuminant condition sensor that senses illuminant conditions surrounding the respective display device.